

IN THE CLAIMS

1. (Currently Amended - Withdrawn) An electric power generator comprising:
 - a fuel cell including a fuel cell anode and a fuel cell cathode separated by at least one proton exchange membrane; and
 - a hydrogen generator operative to provide molecular hydrogen to said fuel cell anode, said hydrogen generator comprising a catalyst and employing a water-based fuel including one of salts, bases and acids, as well as at least one of zinc, magnesium, iron and aluminum,

wherein the extent of availability of said catalyst is controllable.
2. (Withdrawn) An electric power generator according to claim 1 and wherein said catalyst includes at least one of metal belonging to the platinum metal group, metal belonging to the transition metal group, metal oxide belonging to the platinum metal group and metal oxide belonging to the transition metal group.
3. (Currently Amended - Withdrawn) An electric power generator according to claim 1 and wherein said ~~base~~water-based fuel includes at least one of hydroxide of potassium, sodium and lithium.
4. (Withdrawn) An electric power generator according to claim 3 and wherein said at least one of hydroxide of potassium, sodium and lithium is provided in solution in water.
5. (Currently Amended - Withdrawn) An electric power generator according to claim 1 and wherein said ~~acid~~water based fuel includes at least one of sulfuric acid and citric acid.
6. (Withdrawn) An electric power generator according to claim 5 and wherein said at least one of sulfuric acid and citric acid is provided in solution in water.

7. (Withdrawn) An electric power generator according to claim 1 and said water-based fuel includes zinc and said catalyst comprises an impurity in said zinc.
8. (Withdrawn) An electric power generator according to claim 7 and wherein said impurity comprises a transition metal.
9. (Withdrawn) An electric power generator according to claim 1 and said water-based fuel includes aluminum and said catalyst comprises an impurity in said aluminum.
10. (Withdrawn) An electric power generator according to claim 9 and wherein said impurity comprises a transition metal.
11. (Withdrawn) An electric power generator according to claim 1 and said water-based fuel includes magnesium and said catalyst comprises an impurity in said magnesium.
12. (Withdrawn) An electric power generator according to claim 11 and wherein said impurity comprises a transition metal.
13. (Cancelled)
14. (Currently Amended - Withdrawn) An electric power generator according to claim 1 ~~claim 13~~ and wherein said catalyst is formed onto an element which is selectably introducible into said fuel.
15. (Cancelled)
16. (Currently Amended - Withdrawn) An electric power generator according to claim 1 ~~claim 15~~ and wherein said catalyst is selectably introducible into said fuel.
17. (Withdrawn) An electric power generator according to claim 16 and also comprising a catalyst displacer which is operative to selectably mechanically introduce said catalyst into said fuel.

18. (Withdrawn) An electric power generator according to claim 17 and also comprising a catalyst displacement controller which is operative to control the extent of introduction of said catalyst into said fuel.

19. (Withdrawn) An electric power generator according to claim 18 and wherein said catalyst displacement controller employs feedback functionality.

20. (Withdrawn) An electric power generator according to claim 16 wherein said catalyst is selectably introduced into said fuel in liquid form.

21. (Withdrawn) An electric power generator according to claim 20 and also comprising a liquid catalyst introduction controller which is operative to control the extent of introduction of said catalyst into said fuel.

22. (Withdrawn) An electric power generator according to claim 21 and wherein said liquid catalyst introduction controller employs feedback functionality.

23. (Withdrawn) An electric power generator according to claim 1 and wherein:
said catalyst defines a hydrogen generator cathode;
said at least one of zinc, magnesium, iron and aluminum defines a hydrogen generator anode; and
said hydrogen generator anode and said hydrogen generator cathode are electrically interconnected across a resistor.

24. (Withdrawn) An electric power generator according to claim 1 and wherein:
said catalyst defines a hydrogen generator cathode;
said at least one of zinc, magnesium, iron and aluminum defines a hydrogen generator anode; and
said hydrogen generator anode and said hydrogen generator cathode are electrically interconnected across a variable resistor.

25. (Withdrawn) An electric power generator according to claim 1 and wherein:
said catalyst defines a hydrogen generator cathode;
said at least one of zinc, magnesium, iron and aluminum defines a hydrogen generator anode; and
said hydrogen generator anode and said hydrogen generator cathode are electrically interconnected across a current controller.
26. (Withdrawn) An electric power generator according to claim 25 and wherein said current controller is a variable resistance and wherein varying the resistance varies the output of said hydrogen generator.
27. (Currently Amended - Withdrawn) An electric power generator ~~A fuel cell~~ according to claim 23 and wherein said hydrogen generator produces electrical power which is supplied together with electrical power from said fuel cell.
28. (Currently Amended - Withdrawn) An electric power generator according to claim 1 and wherein said water-based fuel includes at least one salt ~~is~~-selected from a group consisting of halides, trihalides, acetates, sulfates, nitrates, borates, acid salts, chromate, stannate, perchlorate and basic salts of Group I metals, ammonium, Group II metals and Group III metals.
29. (Currently Amended - Withdrawn) An electric power generator according to claim 2 and wherein said water-based fuel includes at least one salt ~~is~~-selected from a group consisting of halides, trihalides, acetates, sulfates, nitrates, borates, acid salts, chromate, stannate, perchlorate and basic salts of Group I metals, ammonium, Group II metals and Group III metals.
30. (Currently Amended - Withdrawn) An electric power generator according to claim 7 and wherein said water-based fuel includes at least one salt ~~is~~-selected from a group consisting of halides, trihalides, acetates, sulfates, nitrates, borates, acid salts, chromate, stannate, perchlorate and basic salts of Group I metals, ammonium, Group II metals and Group III metals.

31. (Currently Amended - Withdrawn) An electric power generator according to claim 9 and wherein said water-based fuel includes at least one salt ~~is~~-selected from a group consisting of halides, trihalides, acetates, sulfates, nitrates, borates, acid salts, chromate, stannate, perchlorate and basic salts of Group I metals, ammonium, Group II metals and Group III metals.

32. (Currently Amended - Withdrawn) An electric power generator according to claim 11 and wherein said water-based fuel includes at least one salt ~~is~~-selected from a group consisting of halides, trihalides, acetates, sulfates, nitrates, borates, acid salts, chromate, stannate, perchlorate and basic salts of Group I metals, ammonium, Group II metals and Group III metals.

33. (Currently Amended - Withdrawn) An electric power generator according to claim 13 and wherein said water-based fuel includes at least one salt ~~is~~-selected from a group consisting of halides, trihalides, acetates, sulfates, nitrates, borates, acid salts, chromate, stannate, perchlorate and basic salts of Group I metals, ammonium, Group II metals and Group III metals.

34. (Currently Amended - Withdrawn) An electric power generator according to claim 14 and wherein said water-based fuel includes at least one salt ~~is~~-selected from a group consisting of halides, trihalides, acetates, sulfates, nitrates, borates, acid salts, chromate, stannate, perchlorate and basic salts of Group I metals, ammonium, Group II metals and Group III metals.

35. (Currently Amended - Withdrawn) An electric power generator according to claim 15 and wherein said water-based fuel includes at least one salt ~~is~~-selected from a group consisting of halides, trihalides, acetates, sulfates, nitrates, borates, acid salts, chromate, stannate, perchlorate and basic salts of Group I metals, ammonium, Group II metals and Group III metals.

36. (Currently Amended - Withdrawn) An electric power generator according to claim

16 and wherein said water-based fuel includes at least one salt is-selected from a group consisting of halides, trihalides, acetates, sulfates, nitrates, borates, chromate, stannate, perchlorate acid, salts and basic salts of Group I metals, ammonium, Group II metals and Group III metals.

37. (Withdrawn) An electric power generator according to claim 1 and wherein the extent of availability of said water-based fuel is controllable.

38. (Withdrawn) An electric power generator according to claim 37 and wherein availability of said water-based fuel is controllable by selectable introduction of water to a matrix comprising:

at least one of salts, bases and acids;

at least one of zinc, magnesium, iron and aluminum and alloys thereof;

and

said catalyst.

39. (Original) An electric power generator comprising:

an anode and a cathode separated by at least one proton exchange membrane; and

a hydrogen generator operative to provide molecular hydrogen to said anode, said hydrogen generator comprising a catalyst and employing a water-based fuel, wherein the extent of availability of said catalyst is controllable.

40. (Original) An electric power generator according to claim 39 and wherein said catalyst is selectively introducible into said fuel.

41. (Original) An electric power generator according to claim 39 and wherein said catalyst includes at least one of metal belonging to a group consisting of the platinum metal group, metal belonging to the transition metal group, metal oxide belonging to a group consisting of the platinum metal group and metal oxide belonging to the transition metal group.

42. (Original) An electric power generator according to claim 39 and said water-based fuel includes zinc and said catalyst comprises an impurity in said zinc.

43. (Original) An electric power generator according to claim 42 and wherein said impurity comprises a transition metal.

44. (Original) An electric power generator according to claim 39 and said water-based fuel includes aluminum and said catalyst comprises an impurity in said aluminum.

45. (Original) An electric power generator according to claim 44 and wherein said impurity comprises a transition metal.

46. (Original) An electric power generator according to claim 39 and said water-based fuel includes magnesium and said catalyst comprises an impurity in said magnesium.

47. (Original) An electric power generator according to claim 46 and wherein said impurity comprises a transition metal.

48. (Currently Amended) An electric power generator according to claim 39 and wherein said ~~base-~~water-based fuel includes at least one of hydroxide of potassium, sodium and lithium.

49. (Original) An electric power generator according to claim 48 and wherein said at least one of hydroxide of potassium, sodium and lithium is provided in solution in water.

50. (Currently Amended) An electric power generator according to claim 39 and wherein said ~~acid-~~water-based fuel includes at least one of sulfuric acid and citric acid.

51. (Original) An electric power generator according to claim 50 and wherein said at least one of sulfuric acid and citric acid is provided in solution in water.

52. (Original) An electric power generator according to claim 39 and wherein said catalyst is formed onto an element which is selectably introducible into said fuel.

53. (Original) An electric power generator according to claim 52 and also comprising a catalyst displacer which is operative to selectably mechanically introduce said catalyst into said fuel.

54. (Original) An electric power generator according to claim 53 and also comprising a catalyst displacement controller which is operative to control the extent of introduction of said catalyst into said fuel.

55. (Original) An electric power generator according to claim 54 and wherein said catalyst displacement controller employs feedback functionality.

56. (Original) An electric power generator according to claim 52 wherein said catalyst is selectably introduced into said fuel in liquid form.

57. (Original) An electric power generator according to claim 56 and also comprising a liquid catalyst introduction controller which is operative to control the extent of introduction of said catalyst into said fuel.

58. (Original) An electric power generator according to claim 57 and wherein said liquid catalyst introduction controller employs feedback functionality.

59. (Currently Amended) An electric power generator according to claim 39 and wherein:

said catalyst defines a hydrogen generator cathode;

said water-based fuel includes at least one of zinc, magnesium, iron and aluminum defining ~~defines~~ a hydrogen generator anode; and

said hydrogen generator anode and said hydrogen generator cathode are electrically interconnected across a current controller.

60. (Original) An electric power generator according to claim 59 and wherein said current controller is a variable resistance and wherein varying the resistance varies the output of said hydrogen generator.

61. (Original) An electric power generator according to claim 59 and wherein said hydrogen generator produces electrical power which is supplied together with electrical power from said electrical power generator.

62. (Original) An electric power generator according to claim 39 and wherein the extent of availability of said water-based fuel is controllable.

63. (Original) An electric power generator according to claim 62 and wherein availability of said water-based fuel is controllable by selectable introduction of water to a matrix comprising:

at least one of salts, bases and acids;

at least one of zinc, magnesium, iron, aluminum, tin, calcium, sodium, lithium, metal hydrides based on at least one of nickel, titanium, rare earth metals and alloys thereof; and

said catalyst.

64-74. (Cancelled)

75. (Currently Amended - Withdrawn) An electronic shelf label comprising:

a display; and

an electrical power generator for said display, said electrical power generator comprising:

a fuel cell including a fuel cell anode and a fuel cell cathode separated by at least one proton exchange membrane; and

a hydrogen generator operative to provide molecular hydrogen to said fuel cell anode,

said hydrogen generator comprising a catalyst and employing a water-based fuel including one of salts, bases and acids, as well as at least one of zinc, magnesium, iron and aluminum,

wherein the extent of availability of said catalyst is controllable.

76. (Withdrawn) An electronic shelf label according to claim 75 and wherein said catalyst includes at least one of metal belonging to the platinum metal group, metal belonging to the transition metal group, metal oxide belonging to the platinum metal group and metal oxide belonging to the transition metal group.

77. (Withdrawn) An electronic shelf label according to claim 75 and said water-based fuel includes zinc and said catalyst comprises an impurity in said zinc.

78. (Withdrawn) An electronic shelf label according to claim 77 and wherein said impurity comprises a transition metal.

79. (Withdrawn) An electronic shelf label according to claim 75 and said water-based fuel includes aluminum and said catalyst comprises an impurity in said aluminum.

80. (Withdrawn) An electronic shelf label according to claim 79 and wherein said impurity comprises a transition metal.

81. (Withdrawn) An electronic shelf label according to claim 75 and said water-based fuel includes magnesium and said catalyst comprises an impurity in said magnesium.

82. (Withdrawn) An electronic shelf label according to claim 81 and wherein said impurity comprises a transition metal.

83. (Currently Amended - Withdrawn) An electronic shelf label electric-power generator according to claim 75 and wherein said base-water-based fuel includes at least one of hydroxide of potassium, sodium and lithium.

84. (Currently Amended - Withdrawn) An electronic shelf label ~~electric-power generator~~ according to claim 83 and wherein said at least one of hydroxide of potassium, sodium and lithium is provided in solution in water.

85. (Currently Amended - Withdrawn) An electronic shelf label ~~electric-power generator~~ according to claim 75 and wherein said water-based fuel acid includes at least one of sulfuric acid and citric acid.

86. (Currently Amended - Withdrawn) An electronic shelf label ~~electric-power generator~~ according to claim 85 and wherein said at least one of sulfuric acid and citric acid is provided in solution in water.

87. (Cancelled)

88. (Currently Amended - Withdrawn) An electronic shelf label according to claim 75 ~~claim 87~~ and wherein said catalyst is formed onto an element which is selectably introducible into said fuel.

89. (Cancelled)

90. (Withdrawn) An electronic shelf label according to claim 75 and wherein said catalyst is selectably introducible into said fuel.

91. (Withdrawn) An electronic shelf label according to claim 90 and also comprising a catalyst displacer which is operative to selectably mechanically introduce said catalyst into said fuel.

92. (Withdrawn) An electronic shelf label according to claim 91 and also comprising a catalyst displacement controller which is operative to control the extent of introduction of said catalyst into said fuel.

93. (Withdrawn) An electronic shelf label according to claim 92 and wherein said

catalyst displacement controller employs feedback functionality.

94. (Withdrawn) An electronic shelf label according to claim 90 wherein said catalyst is selectably introduced into said fuel in liquid form.

95. (Withdrawn) An electronic shelf label according to claim 94 and also comprising a liquid catalyst introduction controller which is operative to control the extent of introduction of said catalyst into said fuel.

96. (Withdrawn) An electronic shelf label according to claim 95 and wherein said liquid catalyst introduction controller employs feedback functionality.

97. (Withdrawn) An electronic shelf label according to claim 75 and wherein:

said catalyst defines a hydrogen generator cathode;

said at least one of zinc, magnesium iron and aluminum defines a hydrogen generator anode; and

said hydrogen generator anode and said hydrogen generator cathode are electrically interconnected across a current controller.

98. (Withdrawn) An electronic shelf label according to claim 97 and wherein said current controller is a variable resistance and wherein varying the resistance varies the output of said hydrogen generator.

99. (Withdrawn) An electronic shelf label according to claim 98 and wherein said hydrogen generator produces electrical power which is supplied together with electrical power from said fuel cell.

100. (Currently Amended - Withdrawn) An electronic shelf label according to claim 75 and wherein said water-based fuel includes at least one salt ~~is~~ selected from a group consisting of halides, trihalides, acetates, sulfates, nitrates, borates, chromate, stannate, perchlorate acid, salts and basic salts of Group I metals, ammonium, Group II metals and Group III metals.

101. (Withdrawn) An electronic shelf label according to claim 75 and wherein the extent of availability of said water-based fuel is controllable.

102. (Withdrawn) An electronic shelf label according to claim 101 and wherein availability of said water-based fuel is controllable by selectable introduction of water to a matrix comprising:

at least one of salts, bases and acids;

at least one of zinc, magnesium, iron, aluminum, tin, calcium, sodium, lithium, metal hydrides based on at least one of nickel, titanium, rare earth metals and alloys thereof; and

said catalyst.

103. (Withdrawn) An electronic shelf label comprising:

a display; and

an electrical power generator for said display, said electrical power generator comprising:

a fuel cell including a fuel cell anode and a fuel cell cathode separated by at least one proton exchange membrane; and

a hydrogen generator operative to provide molecular hydrogen to said fuel cell anode,

said hydrogen generator comprising a catalyst and employing a water-based fuel, wherein the extent of availability of said catalyst is controllable.

104. (Withdrawn) An electronic shelf label according to claim 103 and wherein said catalyst is selectably introducible into said fuel.

105. (Withdrawn) An electronic shelf label according to claim 103 and wherein said catalyst includes at least one of metal belonging to the platinum metal group, metal belonging to the transition metal group, metal oxide belonging to the platinum metal group and metal oxide belonging to the transition metal group.

106. (Withdrawn) An electronic shelf label according to claim 103 and said water-based fuel includes zinc and said catalyst comprises an impurity in said zinc.

107. (Withdrawn) An electronic shelf label according to claim 106 and wherein said impurity comprises a transition metal.

108. (Withdrawn) An electronic shelf label according to claim 103 and wherein said water-based fuel includes aluminum and said catalyst comprises an impurity in said aluminum.

109. (Withdrawn) An electronic shelf label according to claim 108 and wherein said impurity comprises a transition metal.

110. (Withdrawn) An electronic shelf label according to claim 103 and said water-based fuel includes magnesium and said catalyst comprises an impurity in said magnesium.

111. (Withdrawn) An electronic shelf label according to claim 110 and wherein said impurity comprises a transition metal.

112. (Currently Amended - Withdrawn) An electronic shelf label ~~electric-power generator~~ according to claim 103 and wherein said ~~base~~-water-based fuel includes at least one of hydroxide of potassium, sodium and lithium.

113. (Currently Amended - Withdrawn) An electronic shelf label ~~electric-power generator~~ according to claim 112 and wherein said at least one of hydroxide of potassium, sodium and lithium is provided in solution in water.

114. (Currently Amended - Withdrawn) An electronic shelf label ~~electric-power generator~~ according to claim 103 and wherein said water-based fuel ~~acid~~ includes at least one of sulfuric acid and citric acid.

115. (Currently Amended - Withdrawn) An electronic shelf label ~~electric-power generator~~ according to claim 114 and wherein said at least one of sulfuric acid and citric acid is provided in solution in water.

116. (Withdrawn) An electronic shelf label according to claim 103 and wherein said catalyst is formed onto an element which is selectably introducible into said fuel.

117. (Withdrawn) An electronic shelf label according to claim 116 and also comprising a catalyst displacer which is operative to selectably mechanically introduce said catalyst into said fuel.

118. (Withdrawn) An electronic shelf label according to claim 117 and also comprising a catalyst displacement controller which is operative to control the extent of introduction of said catalyst into said fuel.

119. (Withdrawn) An electronic shelf label according to claim 118 and wherein said catalyst displacement controller employs feedback functionality.

120. (Withdrawn) An electronic shelf label according to claim 116 wherein said catalyst is selectably introduced into said fuel in liquid form.

121. (Withdrawn) An electronic shelf label according to claim 120 and also comprising a liquid catalyst introduction controller which is operative to control the extent of introduction of said catalyst into said fuel.

122. (Withdrawn) An electronic shelf label according to claim 121 and wherein said liquid catalyst introduction controller employs feedback functionality.

123. (Currently Amended - Withdrawn) An electronic shelf label according to claim 103 and wherein:

said catalyst defines a hydrogen generator cathode;

said water-based fuel includes at least one of zinc, magnesium, iron and aluminum ~~defining~~ defines a hydrogen generator anode; and

said hydrogen generator anode and said hydrogen generator cathode are electrically interconnected across a current controller.

124. (Withdrawn) An electronic shelf label according to claim 123 and wherein said current controller is a variable resistance and wherein varying the resistance varies the output of said hydrogen generator.

125. (Withdrawn) An electronic shelf label according to claim 123 and wherein said hydrogen generator produces electrical power which is supplied together with electrical power from said fuel cell.

126. (Withdrawn) An electronic shelf label according to claim 103 and wherein the extent of availability of said water-based fuel is controllable.

127. (Withdrawn) An electronic shelf label according to claim 126 and wherein availability of said water-based fuel is controllable by selectable introduction of water to a matrix comprising:

at least one of salts, bases and acids:

at least one of zinc, magnesium, iron, aluminum, tin, calcium, sodium, lithium, metal hydrides based on at least one of nickel, titanium, rare earth metals and alloys thereof; and

said catalyst.

128-218. (Cancelled)

219. (Currently Amended - Withdrawn) An electric power generator according to claim 1 and wherein said electric power generator is fitted inside at least one of mobile electronic apparatus and portable electronic apparatus.

220. (Currently Amended) An electric power generator according to claim 39 and

wherein said electric power generator is fitted inside at least one of mobile electronic apparatus and portable electronic apparatus.

221-224. (Cancelled)